



**STAN-EVAL NOTES**  
**CIVIL AIR PATROL VIRGINIA WING**  
**UNITED STATES AIR FORCE AUXILIARY**  
7401 Airfield Drive  
Richmond, Virginia 23237-2250  
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**Pilot Workshop 25 June 2011:** VAWG hosted an instructor pilot workshop on Saturday 25 June 2011 at VAWG HQ. There were 25 attendees from across the Wing. Key topics discussed included the following interactive topics:

- How CAP flying is different and why that is important
- Doing the paperwork and why that's important
- Flying the CAP way
- Weather, IFR, and Tips to fly by
- CRM and ORM for CAP aircrews
- Best practices for the oral and flight portion of a Form 5

There were some great discussions on what airworthiness means, the importance of obstacle departure procedures, how to determine who should be the PIC, shortcuts on getting the paperwork done, and tips for instructors and check pilots. Everyone, including the instructors, learned something new. The briefings will be available on the VAWG Paperless Wing for interested pilots to review. Thanks to the instructors who gave their time and energy to this workshop: Capt Lynn Jensen, Capt Susan Parson, Capt John Karanikas, and Capt Steve Hertz. And thanks to all the participants for their support.

**VAWG Welcomes the GA-8:** We now have a Gippsland GA-8 (N605CP / CPF 9905) assigned to VAWG based at DAN. This aircraft is Australian built and provides VAWG with a very capable platform. It is powered by a 300 HP fuel injected IO-540 Lycoming, comes equipped with the WAAS capable GNS 480, boasts a 4000 lb gross weight, and a 1700 lb useful load. The aircraft is easy to fly but quite different from our Cessna aircraft. VAWG will use this platform to support CD and HLS operations. NHQ requires the following pilot qualifications to fly the GA-8:

1. Pilot must be a qualified SAR/DR mission pilot.
2. Must have a minimum of 300 PIC hours
3. Must be Instrument rated.
4. Satisfactorily complete the on-line GA8 course.
5. Must complete flight training and check ride recommendation from a qualified GA8 instructor pilot.
6. Satisfactorily complete a CAPF 5 proficiency check with a check pilot who is GA8 instructor qualified and is not the same instructor pilot who completed the training.

In exchange for this aircraft, VAWG has transferred N357CP which was the first G1000 equipped aircraft to join VAWG to SCWG.

Pilots wanting to learn more can take the GA-8 familiarization course on the NHQ website and go to the Gippsland website at <http://www.gippsaero.com/ZoneID=141.htm>.

**Bold Face POH Items:** An important item in any Form 5 check ride is to ensure the pilot can execute the bold face items on the emergency checklists from memory. We need to be able to quickly and efficiently execute the first few checklist items for emergencies when things start to go wrong. Once these critical items are completed, there is time to go back to the checklist. Knowing these bolded items could save your life as in many real life emergencies, the checklist may not be accessible (for example, in a recent case of an on board fire, the checklist was destroyed before the pilot could retrieve it). Check and Instructor pilots can go through this on the ground with the pilot in the aircraft. Take the checklist away and then declare various emergencies. Have the pilot physically move the controls and switches as if they were in flight.

**Aircraft Fires:** Recent events published in the press have shown how dangerous an onboard fire is to us in the aviation community and how quickly one must react. The first event was the unfortunate accident involving the Franklins caused by an engine fire. Despite their quick reactions, both occupants were badly burned and Amanda died later from her burns. The second event was the loss of the Liberty Bell B-17. This was an engine fire as well. The pilot resisted the temptation to get back to the airport and wisely landed in a field after going through the appropriate checklists. The aircraft was a total loss but all crew and passengers walked away without a scratch. Had the pilot tried to get back to the airport, the results could have been tragic. The most recent event was the loss of a Goodyear blimp with what appears to have started with an engine fire. The pilot was able to maneuver the blimp near the ground so his passengers could escape but he lost his life when control was compromised due to the fire. Ensure you are intimately familiar with the emergency checklists that deal with onboard fires and be prepared to act quickly.

**Aircraft Systems:** The ground portion of the Form 5 should cover aircraft systems in detail. Knowledge of these systems is not just out of academic interest but is essential for the pilot to conduct flights safely. As we get more sophisticated aircraft, this knowledge becomes even more important. Can you identify all the failure modes of a G1000? (If you can, call me immediately). Do you know how many electrical buses there are and what happens when a particular one goes down? What do you do if the alternator light comes on momentarily and then back off – should you continue or land? What does a RAIM alert mean? Does the aircraft have a generator or an alternator? What's the difference and why do we care? Does the aircraft have a 12 volt or 24 volt system? All of these are good questions to ask to begin an in depth discussion of aircraft systems and what to do when they fail.

**Back to Basics – Spin Training:** In 1949, the FAA dropped the requirement for spin training from the Private Pilot syllabus as there were too many accidents involved with the training. Instead, emphasis was placed on stall and spin awareness. Ever since that decision, there has been an ongoing controversy. Some believe very strongly that you can't be a competent pilot without having spun and recovered. Others believe the FAA made the correct decision. The FAA continues to require spin training for all SEL CFI applicants.

Despite that controversy, no one argues that upset training (which includes spin training) is a good thing for pilot proficiency. Many flight schools offer such training and do it very safely. This training provides the pilot with the skills and confidence to recover from an upset and goes a long way in removing the fear of an upset. Many pilots have never been upside down which is a problem as it can be very disorienting when first experienced. Finding yourself in an upset is a poor time to find out you don't know which way is up. It also takes some skill to recover properly without over stressing the airframe. The following is an extract from the NTSB on a recent upset in IMC that caused structural damage.

*"On June 15, 2011, about 1405 eastern daylight time, a Beech A100, N15L, operated by Dynamic Avlease Inc., was substantially damaged when it experienced an in-flight upset, while in cruise flight near Gray, Tennessee. The two certificated commercial pilots were not injured. Instrument meteorological conditions (IMC) prevailed and an instrument flight rules flight plan had been filed for the flight that departed Bridgewater Air Park (VBW), Bridgewater, Virginia, destined for Mid-Continent Airport (ICT), Wichita, Kansas. The positioning flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.*

*According to initial information obtained from the flight crew and the Federal Aviation Administration (FAA), the airplane was flying in smooth IMC conditions at Flight Level 200 (20,000 feet msl), with an area of "moderate to heavy to extreme" precipitation located about 30 miles to the northwest. As the airplane approached 20 miles from the weather, it began to experience moderate turbulence and "several seconds of rime ice" on the windscreen. The pilot flying deviated course 40-degrees to the south. Turbulence increased further for about 10 seconds, and the airplane then entered an uncommanded left roll and dive. The autopilot disengaged and the pilot's electrically driven attitude indicator tumbled. The flight crew reduced the engine power levers to idle and were able to recover utilizing the copilot's vacuum driven attitude indicator. The airplane was returned to straight and level flight at an altitude of 8,000 feet; however, "flight control instability" persisted. The flight crew subsequently diverted to Tri-Cities Regional Airport (TRI), Blountville, Tennessee, and landed without further incident.*

*Subsequent examination of the airplane by an FAA inspector revealed that the outboard one-third of the left elevator separated in flight, and the outboard right elevator was deformed downward. In addition, the horizontal stabilizer bulkhead frame was fractured and the aft portion of the airframe sustained several areas of deformation."*

Spin or upset training is not a onetime training event. It does need to be repeated periodically. **All VAWG aircraft are placarded against spins** but this doesn't mean that you might not find yourself in an upset situation. Make sure you have the skills to recover!

The proper spin recovery for most aircraft (including VAWG Cessna aircraft) can be summarized by the acronym PARE (but read the POH as techniques vary):

- **Power to idle.** This is critical as power will only make the spin worse and more difficult to recover from.
- **Ailerons and elevator to neutral** – don't keep inducing a stall or a spin.
- **Rudder opposite to the spin** – pilots can find it difficult to determine which way they are spinning due to disorientation. Your turn/bank indicator will show the direction of spin (ignore the ball – it's useless in a spin). It can also take a few seconds to stop the rotation in a well developed spin so be patient unless of course the ground is approaching quickly in which case jump (you have your chute on, right?).
- **Elevator** – As the spin stops, center the rudder and use forward elevator to break the stall. Be careful not to overstress the aircraft as you will be nose down and gaining airspeed quickly. For some aircraft, opposite rudder and forward stick are applied simultaneously. On others, forward elevator is applied only after rotation stops.

The aerodynamics of a spin can be quite complicated (Bill Kershner's books have a good explanation), but simplistically, an aircraft in a spin is both stalled and rotating. Because it's in a stall, the aircraft is actually flying at a slow speed. Generally the ASI will show something close to the stall speed. Unlike a spiral, airspeed will not increase (although it may vary slightly). Typically, an aircraft will lose about 500 feet per rotation although that varies by aircraft type.

A flat spin implies rotation with little or no forward motion. When this happens, the airflow across the rudder is insufficient to stop the rotation. This can happen with an airplane that has exceeded its rearward center of gravity and makes recovery difficult or impossible. The following NTSB (**LAX08LA191**) report demonstrates some poor pilot judgment in a C172 resulting in three deaths.

*"Witnesses flying in a second airplane reported that the two airplanes left their home airport earlier in the day. They flew to another local area airport for a snack where they discussed the return flight (the accident flight). The accident pilot told his peers that he was going to do a spin on the way back to their home airport. He said that he had done spins before with a flight instructor and a passenger in the back. The two airplanes departed the local airport and were en route back to the home airport when the accident airplane radioed the other airplane indicating that he was setting up for the stall/spin maneuver. The pilots in the other airplane watched as the accident airplane began a climb from 5,500 feet to 7,500 feet and commenced with the stall/spin. After one full turn, the airplane returned to normal flight. The accident pilot radioed the other pilots and told them he was going to do another stall/spin, and was going to let it spin a "little more before he start[ed] the recovery." The witnesses observed the accident airplane set up for another spin, enter the spin, and watched as the airplane continued to spin until it crashed into the ocean. According to Cessna, intentional spins are prohibited when the rear seat(s) are occupied. Three people were on board the accident airplane. The airplane and two of its occupants were not located despite efforts by the United States Coast Guard and a private diving company. The National Transportation Safety Board determines the probable cause(s) of this accident as follows: Failure of the pilot to regain airplane control during an intentional stall/spin maneuver."*

**Back to Basics – Spin Avoidance:** To prevent getting into unanticipated spins, instructors should emphasize spin avoidance. Because an aircraft needs to be in a stall before a spin can develop, it's important to teach stall awareness. Instructors should also exercise caution in teaching power on stalls. A power on stall can develop into a spin if not properly executed. An airplane intentionally stalled at a high power setting (as we do on every Form 5 flight) can spin because of the torque of the engine inducing rotation. It is important that the

ball be kept centered during these maneuvers. Should any rotation begin, stop the rotation immediately by applying opposite rudder, pulling the power back, or both.

Not only will keeping the ball centered avoid spins, it's also the only way to fly (other than intentional slips or cross wind landings). Instructors should be alert to the "feet on the floor" style of flying and teach stepping on the ball.

**Contact Approaches:** A contact approach can be a very useful technique when flying IFR as it can greatly simplify getting on the ground. Pilots operating under an IFR flight plan, provided they are clear of clouds and have at least one mile flight visibility and can reasonably expect to continue to the destination airport in those conditions, may request a contact approach. ATC cannot suggest or assign you a contact approach independently. The pilot must request it.

The advantage of a contact approach is that the pilot can navigate to the airport without regard to published procedures. This is particularly useful when you have the airport in site on your way to a published approach fix. Just request a contact approach. It is not required for you to have the airport in site to request a contact approach. There is no missed approach procedure for a contact approach so be sure you can really make it to the airport safely. Nor can you fly on instruments while on a contact approach. You must fly visually on a contact approach remaining clear of clouds. Radar services are automatically terminated on a contact approach so don't expect any. It would also be foolish for a pilot to request a contact approach to an unfamiliar airport. The pilot will be flying in marginal conditions by pilotage and so must know the terrain and the airport well in order to safely execute a contact approach. You must cancel your IFR clearance once on the ground.

**GPS Interference:** There has been a continuing threat to GPS signals widely reported in the aviation press due to a proposal from LightSquared. Testing has demonstrated what everyone already knew which was that the proposed transmitters would cause significant interference with GPS. Despite this finding and widespread concern, LightSquared is still pushing for their proposal and even suggested that GPS users would need to pay them to avoid the interference. Although we can hope that sanity will prevail, this should impress us all on how weak and vulnerable GPS signals are. Be sure you can navigate without it in an emergency.

**Articles for the VAWG Stan Eval Newsletter:** We are always looking for brief articles of interest to VAWG pilots to include in this newsletter. CAP has many very experienced pilots who have useful techniques, experiences, and tips to share. Please send your contribution to [steve.hertz@ngc.com](mailto:steve.hertz@ngc.com). If your article is accepted, you will get a pro rata share of the VAWG Stan Eval Newsletter subscription fees.